



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P O Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

## NOTICE OF ALLOWANCE AND FEE(S) DUE

27885

7590

12/16/2008

Fay Sharpe LLP  
1228 Euclid Avenue, 5th Floor  
The Halle Building  
Cleveland, OH 44115-1843

EXAMINER

HINES, ANNE M

ART UNIT

PAPER NUMBER

2879

DATE MAILED: 12/16/2008

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,085	08/01/2003	Rajasingh Israel	LDHQ10695-3 (GECZ 2	3209

TITLE OF INVENTION: OPTIMAL SILICON DIOXIDE PROTECTION LAYER THICKNESS FOR SILVER LAMP REFLECTOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/16/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

## HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

# **PART B - FEE(S) TRANSMITTAL**

**Complete and send this form, together with applicable fee(s), to:** **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(571)-273-2885**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

27885 7590 12/16/2008

Fay Sharpe LLP  
 1228 Euclid Avenue, 5th Floor  
 The Halle Building  
 Cleveland, OH 44115-1843

## **Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/633,085 08/01/2003 Rajasingh Israel LDHQ10695-3 (GEC) 2 3209

TITLE OF INVENTION: OPTIMAL SILICON DIOXIDE PROTECTION LAYER THICKNESS FOR SILVER LAMP REFLECTOR

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	03/16/2009

EXAMINER	ART UNIT	CLASS-SUBCLASS
HINES, ANNE M	2879	445-026000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2  
 3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_  
 Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,085	08/01/2003	Rajasingh Israel	LDHQ10695-3 (GECZ 2 00083	3209
27885	7590	12/16/2008	EXAMINER	
			HINES, ANNE M.	
			ART UNIT	PAPER NUMBER
			2879	

Fay Sharpe LLP  
1228 Euclid Avenue, 5th Floor  
The Halle Building  
Cleveland, OH 44115-1843

DATE MAILED: 12/16/2008

## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 1003 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 1003 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

# Notice of Allowability

## Application No.

10/633,085

## Examiner

ANNE M. HINES

## Applicant(s)

ISRAEL ET AL.

## Art Unit

2879

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed 8/27/08.
2. ☒ The allowed claim(s) is/are 1-14 and 20-26.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

**DETAILED ACTION**

***Response to Amendment***

The amendment filed on August 27, 2008, has been entered and acknowledged by the Examiner.

Claims 1-14 and 20-26 are pending in the instant application.

***Allowable Subject Matter***

Claims 1-14 and 20-26 are allowed.

Applicant's arguments with regard to the 35 U.S.C. 103(a) rejection of the claims over Arsena (4959583) and Adams (3687713) are found persuasive. Specifically, that it would not have been obvious to one of ordinary skill in the art to modify the silver reflective layer of Arsena with the protective layer of Adams since the Arsena invention seals the reflective layer and encloses a fill gas to protect it from the outside environment.

Applicant's amendment to claim 12 overcomes the 35 U.S.C. 112, 2nd rejection of that claim.

Regarding independent claim 1, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 1, and specifically comprising the limitation wherein a method of forming a lamp comprises providing a reflective interior surface comprising providing a layer of reflective material, and providing a protective layer comprising at least one of an oxide of tantalum and an

oxide of silicon in contact with the reflective layer which protects the layer of reflective material against oxidation and sulfide formation; and forming the lamp from the interior surface and a light source, a thickness of the protective layer being selected such that at least one of the following is satisfied: (a) a color correction temperature of the lamp is no more than 40 K less than a color correction temperature of the light source, and (b) a % reflectance of the reflective interior surface is no more than about 3% less than that of an equivalent reflective surface without the protective layer in a visible spectral range of 400-800 nm.

Regarding claims 2-3, 5-6, 8-10, 13-14, and 21-23, claims 2-3, 5-6, 8-10, 13-14, and 21-23 are allowable for the reasons given in claim 1 because of their dependency status from claim 1.

Regarding independent claim 4, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 4, and specifically comprising the limitation wherein a method of forming a lamp comprising providing a reflective interior surface comprising providing a layer of reflective material, and providing a protective layer which protects the layer of reflective material against oxidation and sulfide formation; and forming the lamp from the interior surface and a light source, a thickness of the protective layer being selected such that a color correction temperature of the lamp is greater than a color correction temperature of the light source.

Regarding claim 24, claim 24 is allowable for the reasons given in claim 4 because of their dependency status from claim 4.

Regarding independent claim 11, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 11, and specifically comprising the limitation wherein a method of forming a lamp comprises providing a reflective interior surface comprising providing a layer of a reflective material, and providing a protective layer which protects the layer of reflective material against oxidation or sulfide formation, the protective layer comprising silica and having a thickness in one of the following ranges: 50-200 angstroms, and 2600-3250 angstroms, and forming a lamp from the interior surface and a light source.

Regarding claim 26, claim 26 is allowable for the reasons given in claim 11 because of their dependency status from claim 11.

Regarding independent claim 12, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 12, and specifically comprising the limitation wherein a method of forming a lamp comprising providing a reflective interior surface comprising providing a layer reflective material, and providing a protective layer which protects the layer of reflective material against oxidation and sulfide formation, and forming the lamp from the interior surface and a light source, the protective layer having an optical thickness ( $t_{opt}$ ) which satisfies the relationship:  $1.1 * (1 + 0.9n) * \text{quarterwavelengths} \leq t_{opt} \leq 1.4 * (1 + 0.9n)$

quarterwavelengths where  $n$  is an integer from 1 to 5, whereby one of the following is satisfied: (a) a color correction temperature of the lamp is no more than 40 K less than a color correction temperature of the light source, and (b) a % reflectance of the reflective interior surface is no more than about 3% less than that of an equivalent reflective surface without the protective layer in a visible spectral range of 400-800 nm.

Regarding claim 25, claim 25 is allowable for the reasons given in claim 12 because of their dependency status from claim 12.

Regarding independent claim 20, the references of the Prior Art of record fail to teach or suggest the combination of the limitations as set forth in claim 20, and specifically comprising the limitation wherein a method of forming a lamp comprises providing a reflective surface which includes silver, determining a first oscillating function when a color correction temperature is plotted against optical thickness for a lamp formed from the reflective surface and a protective layer, determining a second oscillating function when percent reflectance is plotted against optical thickness for a lamp formed from the reflective surface and a protective layer, covering the reflective surface with a protective layer which is light transmissive, the optical thickness of the protective layer being selected, based on the oscillating functions, such that the following relationships are satisfied: the color correction temperature is no more than about 20K less than that corresponding to a protective layer optical thickness of zero, and the reflectance is no more than 3% less than that corresponding to an optical thickness of zero in the visible range of the spectrum.



Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Anne M Hines/  
Patent Examiner  
Art Unit 2879

/NIMESHKUMAR D. PATEL/  
Supervisory Patent Examiner, Art Unit 2879